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<b>(21) International Application Number:</b> PCT/US98/12351 <b>(22) International Filing Date:</b> 12 June 1998 (12.06.98)  <b>(30) Priority Data:</b> 60/057,411 29 August 1997 (29.08.97) US  <b>(71) Applicant (for all designated States except US):</b> THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; Fifth floor, 1111 Franklin Street, Oakland, CA 94607-5200 (US).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> REICH, Norbert, O. [US/US]; 450 San Domingo Drive, Santa Barbara, CA 93111 (US). FLYNN, James [US/US]; 5658 Armitos Avenue, Goleta, CA 93117 (US).  <b>(74) Agent:</b> CANADY, Karen, S.; Merchant, Gould, Smith, Edell, Welter & Schmidt, Suite 400, 11150 Santa Monica Boulevard, Los Angeles, CA 90025-3395 (US).		<b>(81) Designated States:</b> CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.</i>
<b>(54) Title:</b> MODULATORS OF DNA CYTOSINE-5 METHYLTRANSFERASE AND METHODS FOR USE THEREOF  <b>(57) Abstract</b> <p>A synthetic oligonucleotide comprising a C-5 methylcytosine and which recognizes and binds an allosteric site on DNA methyltransferase thereby inhibiting DNA methyltransferase activity is disclosed. Also disclosed is a composition comprising a synthetic oligonucleotide of the invention. The composition is useful for inhibiting DNA methyltransferase activity, thereby inhibiting the methylation of DNA. The composition can be a pharmaceutical composition useful for treating disorders associated with methylation defects, such as cancer and certain developmental disorders. Also disclosed is a method of inhibiting methylation of DNA. The method involves contacting a DCMTase with a synthetic oligonucleotide of the invention in the presence of the DNA, thereby resulting in an enzyme/synthetic oligonucleotide complex. The presence of the complex prevents catalysis, thereby inhibiting DNA methyltransferase activity. Also disclosed is a method of treating a disorder of cell proliferation or development by administering to a subject a synthetic oligonucleotide of the invention. The inhibition of DNA methyltransferase prevents the methylation of DNA thereby treating the disorder of cell proliferation or development.</p>		